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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,539

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Jurgen Schmidt

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EXAMINER

MCCORD, PAUL C

ART UNIT

PAPER NUMBER

2614

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,539	Applicant(s) SCHMIDT ET AL.	
	Examiner PAUL MCCORD	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/23/10, 11/17/10</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Farhangi et al. (US Patent 5647008 hereinafter Far) further in view of Smith et al. (US Patent 7212872 hereinafter Smith)

5. Regarding claim 1:

Far teaches:

A digital mixer functional to combine received audio bitstreams of various channel number and configuration to digitally merge the channels and produce a desired output. (Far: Column 3, lines 9-60; Fig 2: mixer combines variously formatted signal including at least mono and stereo signals) The disclosed formats convey configuration information attached by a broadcaster or content provider in the form of the provider of a CD, AES/EBU or MPEG audio stream (Far: Fig 2: **205, 206, 207**) relevant to at least channel configuration in the form of bit depth and sample rate to signal de-formatters functional to digitally extract raw audio data. (Far: Column 3, lines 9-60; Fig 2) Content formatting provided in at least the form of a target sampling frequency or preferred channel configuration, disclosed as a CD sampling frequency, allows content providers of CD audio to provide mixing information to the digital mixer in the form of at least a CD sampling frequency. (Far: Col 5, l. 37-60; Fig 5) Deformatting and interpolation of a variety of incoming signals (Far: Fig 2, deformatters **240, 242, 244 ...248**, interpolators **250, 252, 254**) functions to resolve different channel configuration conflicts in a manner suitable for consistent processing by a digital mixer (Far: Fig 2: digital mixer **277**). The Far digital mixer reformats the mixed output through a formatter. (Far: Fig 2)

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Far does not specify that each decoded audio signal comprises a different number of channels with different channel configuration items nor does Far explicitly teach the attaching of updated channel configuration items to the audio output by the formatter.

In a related field of endeavor Smith teaches:

A multichannel audio formatting system and method wherein at least two incoming multichannel audio streams are additively mixed or switched (Smith: Abstract: Fig 12: a 5.1 channel audio stream is selectively added to additional at least LCR audio and reformatted for output) channel configuration information bits are updated and attached by a frame formatter functional to extend a signal mapped to speakers in a 5.1 configuration information and audio data to a 6.1 or higher speaker map by appending extension bits. (Smith: Column 10, lines 34-67) It would have been obvious to one of ordinary skill in the art at the time of the invention to include selectively mixing plural multichannel streams to stereo or any appropriate output channel configuration and attaching updated channel configuration information to the mixed stream as taught or suggested by Smith to the any streams mixed of the Far system and method. The average skilled practitioner would have expected predictable results from such a combination of known elements.

6. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Far further in view of Smith as applied to claim 1 above and further in view of Saunders et al. (US Patent 7266501.)
7. Regarding claim 2:

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Far in view of Smith does not disclose producing multichannel audio output with an MPEG-4 format header.

In a related field of endeavor Saunders teaches:

An audio system functional to compress the output of an audio mixer by a CODEC inclusive of MPEG-4, based on the downstream device application to produce a compressed mixed digital master suitable for decoding by a downstream device.

(Saunders: Col 6, l. 38-50; Col 8, l. 19-50) It would have been obvious to one of ordinary skill in the art at the time of the invention to include updating the Far in view of Smith mixed digital audio output with updated configuration data in the form of the Saunders taught MPEG-4 CODEC. One of ordinary skill in the art would have expected predictable results from such a combination.

Response to Arguments

8. Applicant's arguments filed 11/17/10 have been fully considered but they are not persuasive.

9. Applicant argues:

Far and Smith deal with audio signal mixing at only the sender or transmitter side and as such there is no channel configuration conflict at the receiver side. In support applicant argues that Farhangi's disclosure of deformatters functional to resolve word lengths and sampling clock cycles between various streams do not comprise channel configurations. Applicant further argues that the absence of a published MPEG-2

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standard at the time of Farhangi's filing precludes the prior art combination from addressing conflict problems arising from multiple audio channels.

10. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In fact Far and Smith both operate decoders or deformaters on downstream devices. (Smith: Figs 9, 10: 5.1 and matrix decoders function to appropriately map incoming audio to an output configuration), (Far: Fig 2: deformaters, digital volume controllers (DVC), digital mixer function to convert, attenuate and mix audio received on various interfaces) In combination the references teach or suggest a system for receiving audio channels on various interfaces, deformatting the channels into a common format, mixing said channels and outputting audio in a manner appropriate to an audio output configuration. Thus Far in view of Smith suggests operation of a downstream device in a manner functional to mix various incoming signals comprising various channels into an appropriate output format for as mono, stereo or multi-channel output.

Broadcasters or content providers each encode their product at least in a manner consistent with a codec or mode of transmission. Incoming streams can not be expected to share a format, channel configuration or channel number. A digital mixer (such as Far: digital mixer 277) can then combine equal length digital words corresponding to a shared clock instant. In this way conversion or de-formatting from the native state in which the content provider has encoded the signal into a raw audio data format is a form of conflict resolution.

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While true that Farhangi explicit in regard to the decoding of streams encoded in a surround format, this does not prevent the combination of Farhangi and Smith from addressing such a use. Farhangi suggests the mixing of streams with different numbers of channels, at least in the form of a mono channel such as would be provided by a microphone stream in combination with a stereo signal or multi-format signal as provided by a CD player or EBU digital audio signal (Far: Fig 2). Smith teaches a backward compatible output decoder functional to mix additional and existing audio channels into a predetermined format including a 5.1, 6.1 and other surround formats (see at least Smith: figs 1-4). The combination of Farhangi in view of Smith teaches a mixer functional to mix inputs of various channel configurations and to output the mix into a predetermined format including a surround format such as 5.1. Thus applicant's arguments are not persuasive and claim 1 is not allowable.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action.

In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL MCCORD whose telephone number is (571)270-3701. The examiner can normally be reached on M-F 7:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (571)272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. M./

Examiner, Art Unit 2614

/CURTIS KUNTZ/

Supervisory Patent Examiner, Art Unit 2614